AD-A118 642 ARMY ENVIRONMENTAL HYGIENE AGENCY ABERDEEN PROVING GR--ETC F/G 6/20
DERMAL HAZARD EVALUATION OF DIETHYL CHLOROETHYL AMINE UNDERWEAR--ETC(U)
AUG 82 R A ANGERHOFER, M J TOPPER
UNCLASSIFIED USAEHA-75-51-0218-82 NL

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UNITED STATES ARMY ENVIRONMENTAL HYGIENE AGENCY

ABERDEEN PROVING GROUND, MD 21010

DERMAL HAZARD EVALUATION OF DIETHYL
CHLOROETHYL AMINE UNDERWEAR FABRIC TREATMENT
STUDY NO. 75-51-0219-82
APRIL 1979 - JUNE 1982

A E H A

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REPORT DOCUMENTATION PAGE

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	6. PERFORMING ORG. REPORT NUMBER:
7. AUTHOR(s): Richard A. Angerhofer, Michael J. Topper, DVM	8. CONTRACT OR GRANT NUMBER(s):
9. PERFORMING ORGANIZATION NAME AND ADDRESS: Commander, US Army Environmental Hygiene Agency, Aberdeen Proving Ground, MD 21010	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS:
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Diethyl Chloroethyl Amine
Underwear Fabric Treatment
Fabric Treatment
Dermal Hazard Evaluation

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

To provide guidance for further skin testing, diethyl chloroethyl amine - treated cotton underwear fabric was applied in patch form to the intact and abraded skin of New Zealand White rabbits. Treated cotton fabrics OD III DS 0.144 and White DS 0.079 did not cause primary skin irritation in rabbits under controlled test conditions. It was recommended that cotton fabrics reacted with diethyl chloroethyl amine to a degree of substitution (DS) of less than 0.145 mole of amine substitute/mole of cellulose monomer unit be approved for further skin testing, including prophetic human patch testing.

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DEPARTMENT OF THE ARMY Mr. Angerhofer/lm/AUTOVON
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY 584-3980
ABERDEEN PROVING GROUND, MARYLAND 21010

REPLY TO ATTENTION OF

24 AUG 1982

HSHB-LT/WP

SUBJECT: Dermal Hazard Evaluation of Diethyl Chloroethyl Amine Underwear Fabric Treatment Study No. 75-51-0219-82, April 1979 - June 1982

Commander
US Army Natick Research and Development Laboratories
ATTN: DRDNA-VTC (Frank Kane)
Natick, MA 01760

EXECUTIVE SUMMARY

The purpose, essential findings and recommendations of the inclosed report follows:

a. Purpose. The purpose of this study was to provide guidance for further testing of a diethyl chloroethyl amine-treated cotton underwear fabric.

b. Essential Findings. Treated cotton underwear fabrics OD III DS 0.144 and White DS 0.079 did not cause primary skin irritation in rabbits under controlled test conditions.

c. Major Recommendations. It is recommended that cotton fabrics reacted with diethyl chlorethyl amine to a degree of substitution (DS) of less than 0.145 mole of amine substitute/mole of cellulose monomer unit be approved for further skin testing, including prophetic human patch testing.

FOR THE COMMANDER:

JOHN F. MAZUR
LTC, MSC
Director, Laboratory Services

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as

CF:
HQDA (DASG-PSP) wo incl
Cdr, DARCOM (DRCSG)(2 cy)
Cdr, HSC (HSPA-P)
Comdt, AHS (HSHA-IPM)
Cdr, MEDDAC, Ft Devens
(PVNTMED Actv)(2 cy)
Cdr, WRAMC (PVNTMED Actv)

DEPARTMENT OF THE ARMY
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010

REPLY TO ATTENTION OF

HSHB-LT/WP

DERMAL HAZARD EVALUATION OF DIETHYL CHLOROETHYL AMINE UNDERWEAR FABRIC TREATMENT
STUDY NO. 75-51-0219-82
APRIL 1979 - JUNE 1982

1. AUTHORITY. DF, DASG-PSP-O, Office of The Surgeon General, 20 April 1979, subject: Toxicity Clearance - Underwear Fabric Treatment, with inclosure, DRDNA-VTC, US Army Natick Research and Development Command, 12 April 1979, same subject.

2. REFERENCE. Toxicology Division Standing Operating Procedures, US Army Environmental Hygiene Agency (USAEHA), 1981.

3. PURPOSE. The purpose of this study was to provide guidance for further testing of a diethyl chloroethyl amine-treated cotton underwear fabric.

4. SUMMARY OF FINDINGS. Dermal hazard evaluations of a newly developed sweat barrier treatment for cotton underwear fabric were conducted by this Agency using New Zealand White rabbits. The following table presents skin toxicity data developed in this Agency:*†

TABLE. PRESENTATION OF DATA FROM SKIN IRRITATION STUDIES

Test	Results	Interpretation
Olive Drab Cloth Single 24-hour application over intact and abraded skin of New Zealand White rabbits. 2 x 2 cm patches of saline-moistened fabric labeled OD III DS 0.144 applied to each of six rabbits.	OD III DS 0.144 did not cause any irritation of the intact skin or of the skin surrounding an abrasion.	No restriction for acute application to human skin.
White Cloth Single 24-hour application over intact and abraded skin of New Zealand White rabbits. 2 x 2 cm patches of saline-moistened fabric labeled White DS 0.079 applied to each of six rabbits.	White DS 0.079 did not cause any irritation of the intact skin or of the skin surrounding an abrasion.	No restriction for acute application to human skin.

* In conducting the study described in this report, the investigator adhered to the "Guide for the Care and Use of Laboratory Animals," US Department of Health, Education, and Welfare Publication No. (NIH) 74-23, revised 1978.
† The study reported herein was performed in animal facilities fully accredited by the American Association for the Accreditation of Laboratory Animal Care.

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5. CONCLUSION AND RECOMMENDATION. Treated cotton underwear fabrics OD III DS 0.144 and White DS 0.079 did not cause any skin irritation in rabbits under the above test conditions. The Analytical Quality Assurance review is located in the Appendix. It is recommended that cotton fabrics reacted with diethyl chloroethyl amine to a degree of substitution (DS) of less than 0.145 mole of amine substitute/mole of cellulose monomer unit be approved for further skin testing, including a prophetic human patch test.

RICHARD A. ANGERHOFER
Biologist
Toxicology Division

MICHAEL J. TOPPER, DVM
CPT, VC
Laboratory Animal Veterinary Officer
Toxicology Division

APPROVED:

ARTHUR H. McCREESH, Ph.D.
Chief, Toxicology Division

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APPENDIX

ANALYTICAL QUALITY ASSURANCE

The Analytical Quality Assurance Office certifies the following with regard to this study:

a. This study was conducted in accordance with:

(1) Standing Operating Procedures developed by the Toxicology Division, USAEHA.

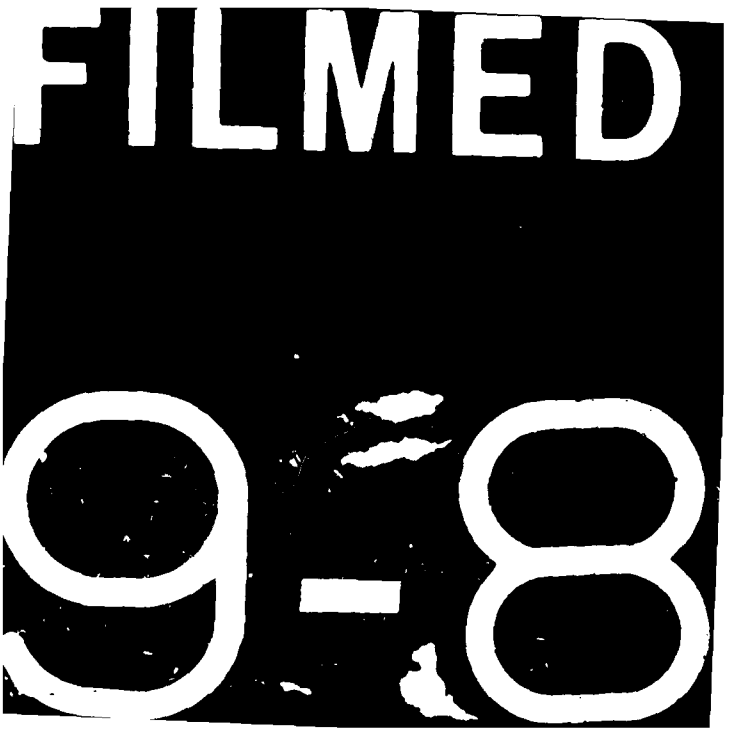
(2) Title 21, Code of Federal Regulations, 1981 rev, Part 58, Good Laboratory Practice for Nonclinical Laboratories Studies.

b. Facilities were inspected during its operational phase tc insure compliance with paragraph a above.

c. The information presented in this report accurately reflects the raw data generated during the course of conducting the study.

Paul V. Sneeringer

PAUL V. SNEERINGER, Ph.D.
Chief, Analytical Quality
Assurance Office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